

For immediate release

## **Successful Delivery of First 1.4 kW Solid Acid Fuel Cell Stack by Norwegian-Californian Partnership**

February 23, 2011

SAFCCell, Inc. (Pasadena, CA) delivered this week a 1.4 kW solid acid fuel cell (SAFC) stack to Nordic Power Systems (NPS, Norway), exceeding the target performance and marking a major technical milestone in its 18-month development contract with NPS.

In January 2010 SAFCell was contracted by the Norwegian system integrator to develop its patented SAFC stacks for incorporation into NPS' diesel auxiliary power units (APUs).

The SAFC stack will be integrated into NPS' proprietary cool flame diesel reformer system, converting the chemical energy of the diesel fuel directly into clean electrical power and heat. Combining these two advanced technologies will result in lighter, quieter, less costly, and higher performing diesel fuel cell systems that NPS plans to market for both mobile and stationary auxiliary power applications. With support from the Norwegian Research Council the integration of these two technologies is proceeding rapidly.

The SAFC stack demonstrated operability with both dilute hydrogen and reformat gas, with only a marginal difference in performance between the two fuel streams. The performance confirmed SAFC tolerances to high levels of impurities that "poison" and dramatically decrease the performance of lower temperature fuel cell technologies.

"Hitting, and even exceeding, this technical milestone confirms that SAFCell's stacks are scalable to the kilowatt level and can run on commercially available fuels such as diesel," stated SAFCell's founder and CEO, Dr. Calum Chisholm. Moreover, SAFCell has "observed extremely high reliability in our stacks over the past year, and we believe that the technology is ready for commercialization in key initial markets," said Dr. Chisholm.

"We are very excited by the results demonstrated so far, especially as the power and performance is now at a level where it can be integrated into our APU," said Dr. Dag Overbo, the Technology Director for Nordic Power Systems. He also stated that "incorporating SAFCell's stacks could greatly simplify our overall system and lead to both weight and efficiency gains."

NPS develops efficient, environmentally friendly fuel cell power packs that enable nearly silent and emission-free power generation from commercially available fuels. NPS' cool flame reformer innovation allows for onboard, on-demand diesel or biodiesel reforming in fuel cell systems, thus opening a variety of markets for fuel cell applications. As a preparation for commercial introduction of the power packs, NPS is currently delivering its first demonstrators to select partners.

SAFCell, Inc. develops scalable solid acid fuel cell stacks for applications requiring tens of watts to tens of kilowatts. Based on technology developed at the California Institute of Technology (Caltech), and operating at mid-range temperatures around 250°C, SAFCell's stacks tolerate fuel impurities that pose obstacles to other fuel cell technologies. This allows SAFCell stacks to run more easily on commercially available gas fuels (e.g., propane and butane) or liquid fuels (e.g., methanol, diesel and bio-oils), greatly reducing the overall fuel cell system complexity and cost. SAFCell is partnering with targeted system integrators to enter first portable, and then stationary power markets.

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**For more information contact:**

**SAFCell Inc.**

Dr. Calum Chisholm, CEO  
+1 626.200.5327

**Nordic Power Systems (Norway)**

Tor-Geir Engebretsen, CEO  
+ 47.90.15.80.40

**About SAFCell Inc.**

SAFCell is developing rugged, portable power systems for military and commercial markets. SAFCell's stacks are built using an innovative solid acid fuel cell design which allows fuel flexibility and reduced costs. SAFCell was formed in 2009 using technology developed and patented at the California Institute of Technology.

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